p=0.182). **CONCLUSIONS:** Estimates of the effect of medication choice after TNFi use on healthcare costs may be biased if providers prescribe selectively. Using an instrumental variables approach to control for this selection bias, we found that traditional methods may underestimate all-cause cost savings from switching to non-TNFi after use of a TNFi.

PMS29

CONSUMPTION OF BIOLOGIC TREATMENTS FOR RHEUMATOID ARTHRITIS IN THE BRAZILIAN PUBLIC HEALTH SYSTEM

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OBJECTIVES: To analyse the effects in patient access, treatment costs and annual expenditure with biologic drugs for rheumatoid arthritis after the inclusion of 5 biologic drugs in 2014 in the Brazilian Public Health System. **METHODS:** The number of rheumatoid arthritis patients receiving treatment with biologic drugs from 2011 to 2016 as well as the proportion of patients on each of the 3 treatments available in 2013 (Adalimumab, Infliximab and Etanercept) and the 5 new treatments available from 2014 onward (Certolizumab, Abatacept, Golimumab, Tocilizumab and Rituximab) were observed using data provided by DATASUS. Annual treatment costs for each treatment from 2013 to 2016 and a weighted average based on the proportion of patients observed were calculated. The weighted average treatment cost and the number of patients receiving treatment made it possible to estimate the annual expenditure on biologic drugs for rheumatoid arthritis from 2013 to 2016. **RESULTS:** A reduction of 34.6% in the weighted average treatment cost was observed from 2013 to 2016 . Patient access to biologic treatments increased substantially from 25.551 patients observed in 2011 to 52.494 in 2016. Annual expenditure also showed an increase, with estimations of R$ 839 million in 2013 to R$ 920 million in 2016. **CONCLUSIONS:** Our results suggest that the inclusion of 5 new biologic drugs to treat rheumatoid arthritis in 2014 helped decrease the average treatment cost per patient as a result of the lower costs of the new drugs introduced in 2014, price reductions from the treatments available before 2014 and a gradual increase on the number of patients receiving less costly treatments. Patient access significantly improved, with more than twice as many patients receiving treatment in 2016 compared to 2011, while annual expenditure only showed a slight increase of 9.7% between 2013 to 2016.

PMS30

MINIMALLY-INVASIVE SPINAL SURGERY VS OPEN SURGERY FOR PATIENTS WITH POSTERIOR SURGERY – ANALYSIS OF PATIENT PRESENTATION, COMORBIDITIES AND PERI-OPERATIVE OUTCOMES

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OBJECTIVES: Patient characteristics that may affect outcomes following minimally invasive surgery (MIS) for posterior spinal fusion (PSF) are not well understood. In this exploratory study, demographics, comorbidities, hospital length of stay (LOS), and discharge status (DS) of patients treated with MIS vs open PSF are analyzed. **METHODS:** All patients with an inpatient elective ICD-10 procedure code for PSF, posterior approach, from 10/2015 to 6/2017 were identified in the Premier database. Patients with an ICD-10 code for percutaneous or endoscopic surgery, or with a hospital charge specific to MIS-only surgical devices were categorized as "MIS" patients. All others were categorized as "Open". Patient demographics (age, gender, marital status, race, payer), hospital characteristics and patient comorbidities (Elixhauser Index) were identified at time of surgery, along procedural information (APR-DRG and MS-DRG) and payer type. Generalized linear models were built to analyze length of stay, percent home discharge and total cost of care for patients with uncomplicated surgery (DRG 460 - APR-DRG 304) in open vs MIS PSF. **RESULTS:** 17,028 Open vs 674 MIS patients were analyzed (average age: 61.5 – 43% male). There were no differences between the Open vs MIS cohorts in age, gender, average Elixhauser score, payer and any of the Elixhauser comorbidities except for obesity (Percentage obese patients: Open: 24% vs MIS: 19%). There were statistically significant differences in adjusted length of stay (Open: 3.10 (95% CI: 3.07-3.13) vs MIS: 2.91 (95% CI: 2.76-3.07)), home discharge status (Open: 60.2% (59.4%-61.0%) vs MIS: 67.0%(62.9%-71.3%)) and index admission cost (Open: US$ 27,283 (95%CI: 27,063-27,504) vs MIS: US$ 33,155 (95%CI: 31,656-34,)). **CONCLUSIONS:** Patients undergoing MIS were similar to open-surgery patients except for obesity, which predominated in open surgeries. Whereas costs for MIS were higher than with open PSF, MIS was associated with statistically shorter LOS and a greater discharged home status vs Open surgery.

PMS31

QUANTIFYING THE IMPORTANCE OF MODEL PARAMETERS AND STRUCTURAL ASSUMPTIONS ON THE VALUE OF TREATMENTS FOR RHEUMATOID ARTHRITIS USING METAMODELING

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OBJECTIVES: Our aim was to quantify the relative importance of model parameters and model structures on the cost-effectiveness estimates of biologic disease modifying anti-rheumatic drugs (bDMARDs) vs conventional DMARDs (cDMARDs) for treatment of patients with moderate to severe rheumatoid arthritis with inadequate response to cDMARDs. **METHODS:** We used the Innovation and Value Initiative's open-source rheumatoid arthritis individual patient simulation to simulate outcomes. 1,000 sets of parameter values were sampled in a probabilistic sensitivity analysis (PSA) and 32 model structures were simulated. For each parameter set and model structure, 1,000 patients were simulated to calculate the mean incremental net monetary benefit (iNMB). The simulated mean iNMB was regressed on values of the model parameters and characteristics of the model structures using linear regression models. The absolute values of the coefficients of standardized variables were used to rank the model inputs by their relative importance. **RESULTS:** Structural assumptions related to treatment switching, long-term progression of the Health Assessment Questionnaire (HAQ) score, utility, and the effect of treatment on HAQ had large impacts on the iNMB. For example, models that use a latent class growth model to simulate HAQ progression for patients using cDMARDs were predicted to increase the iNMB by around $45,000 relative to models that assumed a linear rate of progression. Standardized input parameters with the largest coefficients in absolute value included the extent to which the HAQ score rebounded after treatment failure and the impact of changes in the HAQ score on mortality. **CONCLUSIONS:** Cost-effectiveness estimates for rheumatoid arthritis vary due to both parameter and structural uncertainty. New studies are needed to improve the quality of parameter estimates; consensus-driven approaches such as Delphi panels can help determine appropriate model structures. Research should prioritize the most sensitive model parameters and debates should focus on the structural assumptions most likely to influence results.

PMS32

EFFECTIVENESS AND COSTS OF CONVENTIONAL DMARD THERAPY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: Biological therapy for rheumatoid arthritis (RA) is still associated with high costs and has impacted the budget in the Colombian Health System in the last decade. We aimed to describe the costs and the effectiveness of conventional therapy in patients with RA using Disease Activity Score 28 (DAS28). **METHODS:** During 12-month we followed patients with RA receiving conventional therapy, under a T2T model. Clinical follow-up was defined according to DAS28: every 3-5 weeks (DAS28>5.1), every 7-9 weeks (DAS28≥.1 and ≤5.1), and every 11-13 weeks (DAS28<3.1). We stratified patients in four groups: remission, low disease activity (LDA), moderate disease activity (MDA) and severe disease activity (SDA). Means and standard deviations were calculated for continuous variables and categorical variables were presented as percentages. We assessed the overall drug expenses using US Dollars at the official rate of exchange for December 2017. **RESULTS:** In a 12 month period 1310 patients were followed, 85% were women. Mean age was 60 ±11, mean DAS28 was 3.69 ±0.98. After 12 months we achieved remission in 42.2%, and LDA in 24.73% of our patients (at overall response of 67%). The most used medication was methotrexate 42%, followed by prednisone 18%, sulfasalazine 16%, chloroquine 10%, aziatropine 8% and leflunomide 7%. The costs for conventional DMARD therapy were USD $281.173, saving approximately for all patients USD$10.795.659 (mean biological therapy cost $8.458 per patient/year) through avoiding early use of biological therapy, using a T2T approach and patient multidisciplinary patient centered care (PCC) model. **CONCLUSIONS:** To achieve remission or LDA in patients with RA at a low cost is possible using conventional DMARDs and a PCC model. Other studies have shown the importance to establish clear criteria for the use of biological therapy in order to use it with economic rationality.

PMS33

COST-EFFECTIVENESS OF A FIXED-DOSE COMBINATION THERAPY OF LESINURAD AND ALLOPURINOL FOR SECOND-LINE GOUT THERAPY: A US PAYER PERSPECTIVE

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OBJECTIVES: To determine the cost-effectiveness of the recently-approved fixed-dose oral combination of lesinurad/allopurinol (L/A) for patients with gout in whom allopurinol monotherapy alone has failed. **METHODS:** A Markov cohort model with a US private payer perspective and lifetime horizon was developed based on pooled data from the CLEAR 1 and CLEAR 2 Phase III trials of L/A, and adjusted for gender. Model inputs included prevalence of gout, flare prophylaxis and treatment, utility, safety, efficacy, mortality, and therapy costs. Key outputs included estimates of mean costs and quality-adjusted life years (QALYs), and incremental cost-effectiveness ratios (ICER). A probabilistic sensitivity analysis (PSA) was performed running the model 1000 times, with data randomly sampled from the distribution of each parameter. One-way sensitivity analysis was conducted. The number of flares and duration with tophi were also reported. **RESULTS:** The mean costs and QALYs per patient were $46,000 and 12.67 QALYs for L/A versus $14,000 and 12.41 QALYs for allopurinol monotherapy. Compared with allopurinol monotherapy, L/A had an estimated ICER of $126,000 per QALY. A total of 57.7% of the runs fell below a $150,000 ICER threshold in the PSA. In 1-way sensitivity analyses, the top 5 impactful variables (ICER ranges) are L/A efficacy ($95,000–201,000), disutility of tophi ($95,000–187,000), allopurinol efficacy ($103,000–189,000), disutility of flares ($106,000–154,000), and allopurinol discontinuation ($112,000–146,000). Over average lifetimes of 25 years, mean flares per patient-year were 10.1 and 11.2; mean patient-years with tophi were 5.6 and 7.3 for L/A and allopurinol monotherapy, respectively. Costs were rounded to $1000s. **CONCLUSIONS:** Gout is a chronic inflammatory condition characterized by debilitating health outcomes. This cost-effectiveness analysis demonstrates that, compared with allopurinol monotherapy, combination of L/A increases QALYs and results in ICERs that could be considered cost-effective from US payers' perspective at the commonly-accepted willingness-to-pay threshold of $150,000/QALY.

PMS34

COST-EFFECTIVENESS ANALYSIS OF BIOLOGIC THERAPIES FOR TREATMENT OF PSORIATIC ARTHRITIS

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OBJECTIVES: To compare cost-effectiveness of sequential treatments for patients with psoriatic arthritis (PsA) from US societal perspective. **METHODS:** A discretely